Composite-Video Matrix Switchers System

User Manual

MX / MXP
Matrix Series

HDTV BNC RGBHV YUV BAL ETH RS 232

Please read this manual carefully before using this product.

Notice：

This **MXP Matrix Switchers User Manual** takes example of the Matrix model MXP-1616. It can be used as user's manual of other MXP matrix switcher models. This manual is only an instruction for operators, not for any maintenance usage. Any changes of functions and parameters since then will be informed separately. Please refer to the dealers for the latest details.

All product function is valid till 2008-1-1

Safety Operation Guide

In order to ensure the credibility use of the product and the user's safety, please comply with the following items during installation and maintenance:

①

The system must be earthed properly. Please do not use two blades plugs and ensure the alternating power supply ranged from 100v to 240v and from 50Hz to 60Hz.

②

Do not put the switcher in a place of too hot or too cold.

③

To avoid any damage by over heat, please keep the working environment good in ventilation to radiate the heat when running the switcher.

④

The switchers should be turned off when in rainy and humid days or nonuse for a long time,

⑤

The alternating power supply line should be disconnected with the power socket during the following operation.

A. Take out or reinstall any component of the switcher
B. Disconnect or re-connect any connector of the switcher

⑥

Please do not attempt to maintain and uncover the switcher for there is a high-voltage component inside and the risk of the electric shock.

⑦

Do not splash any chemical product or liquid on or near the equipment.

Contents

1. INTRODUCTION 1

1.1 ABOUT MXP MATRIX SWITCHER SYSTEM 1
1.2 MXP MATRIX SWITCHER MODELS 1

2. PACKING OF THE PRODUCT 2

3. INSTALLATION 2

4. FRONT VIEW OF THE PRODUCT 3

4.1 FRONT VIEW OF THE MXP0404 SERIES 3
4.2 FRONT VIEW OF THE MXP8 SERIES 3
4.3 FRONT VIEW OF THE MXP16 SERIES 3
4.4 FRONT VIEW OF THE MXP24, 32 SERIES 4
4.5 FRONT VIEW OF THE MXP48, 64 SERIES 4
4.6 FRONT VIEW OF THE MXP96, 128 SERIES 5

5. REAR VIEW OF THE PRODUCT 6

5.1 REAR VIEW OF THE MXP4X4 SERIES 6
5.2 REAR VIEW OF THE MXP8 SERIES 6
5.3 REAR VIEW OF THE MXP16 SERIES 6
5.4 REAR VIEW OF THE MXP24, 32 SERIES 7
5.5 REAR VIEW OF THE MXP48,64 SERIES 8
5.6 REAR VIEW OF THE MXP96,128 SERIES 9

6. EXTERNAL CONNECTION 10

6.1 INTRODUCTION OF THE INPUT AND OUTPUT CONNECTORS 10
6.2 CONNECTION OF RS-232 COMMUNICATION PORT 10
6.2.1 Connection with Control Systems 10
6.2.2 Connection with Computer 10
6.3 HOW TO CONNECT WITH THE INPUT AND OUTPUT TERMINALS 11
6.4 HOW TO CONNECT WITH THE MXP DEVICES 11
6.4.1 Connection of the MXP Matrix with RCA Connectors 11
6.4.2 Connection of the MXP Matrix with BNC Video Connectors and Captive Screw Audio Connectors 12

7. OPERATION OF THE CONTROL PANEL 13

7.1 FRONT PANEL DESCRIPTION 13
7.1.1 Front Panel Description of MXP0404 13
7.1.2 Front Panel Description of MXP1616 13
7.1.3 Front Panel Description of Additional Buttons for MXP32, MXP48, MXP64, MXP96, MXP128 14
7.2 COMMAND FORMAT OF THE SWITCHING OPERATION 15
7.3 EXAMPLES OF OPERATION 15

8. USAGE OF THE REMOTE CONTROLLER (OPTIONAL ACCESSORY) 17

9. COMMUNICATION PROTOCOL AND COMMAND CODES 17

10. TECHNICAL SPECIFICATIONS 20

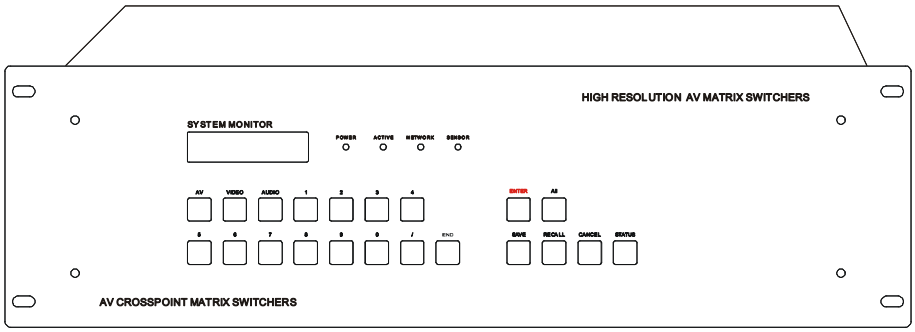
11. TROUBLESHOOTING & MAINTENANCE 23

1. Introduction

1.1 About MXP Matrix Switcher System

MXP series Matrix switcher is a high-performance professional video and audio signal switcher that can be used for cross switching of multi computer and audio signal.

MXP series switcher mostly apply in broadcasting TV engineering, multi-media meeting room, big screen display engineering, television education, command control center or other fields. It provides power-fail locale protection function, LCD displaying, shortcut selecting and saving function. With RS232 interface, it can be worked with PC, remote control system and any other far-end control system devices.The user manual takes MXP1616 as the example; other models can take reference from it too.



F 1-1 MXP 1616

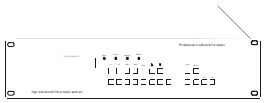
1.2 MXP Matrix Switcher Models

According to different situation and users, the MXP series can be classified into the following models:

Specifications / Models	A/V Input	A/V Output	RS232 Interface	LCD Display
MATRIX MXP0404	4	4	√	×
MATRIX MXP0802	8	2	√	√
MATRIX MXP0804	8	4	√	√
MATRIX MXP0808	8	8	√	√
MATRIX MXP1604	16	4	√	√
MATRIX MXP1608	16	8	√	√
MATRIX MXP1616	16	16	√	√
MATRIX MXP2408	24	8	√	√
MATRIX MXP2416	24	16	√	√
MATRIX MXP2424	24	24	√	√
MATRIX MXP3208	32	8	√	√
MATRIX MXP3216	32	16	√	√
MATRIX MXP3224	32	24	√	√
MATRIX MXP3232	32	32	√	√
MATRIX MXP4832	48	32	√	√
MATRIX MXP4848	48	48	√	√

Specifications / Models	A/V Input	A/V Output	RS232 Interface	LCD Display
MATRIX MXP6432	64	32	√	√
MATRIX MXP6448	64	48	√	√
MATRIX MXP6464	64	64	√	√
MATRIX MXP9664	96	64	√	√
MATRIX MXP9696	96	96	√	√
MATRIX MXP12864	128	64	√	√
MATRIX MXP12896	128	96	√	√
MATRIX MXP128128	128	128	√	√

2. Packing of the Product



MXP Matrix Switcher

RS-232 Communication Cord

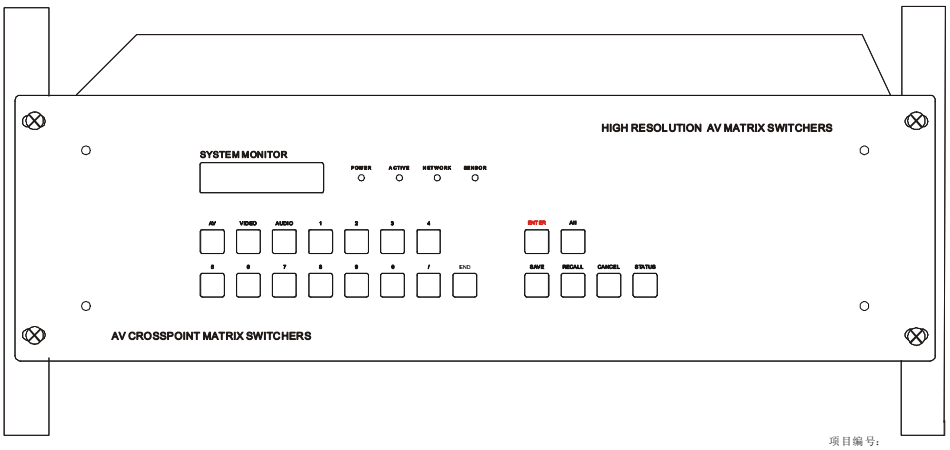
Power Supply Cord

CD with Application

User Manual and Quality Guarantee

3. Installation

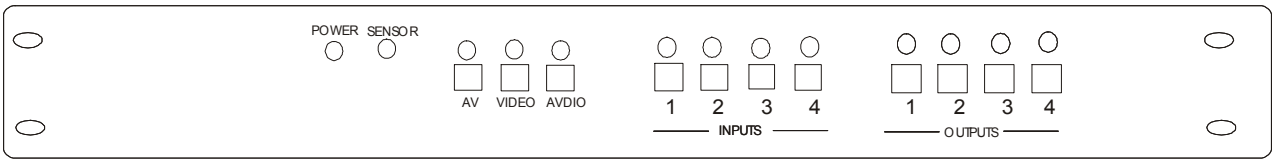
MXP matrix switchers adopt metal shell and can be stacked with other device. Moreover, they are rack-mountable enclosure and can be installed in the standard 19” rack.



F 3-1 Installing the MXP matrix switcher in the standard 19” rack

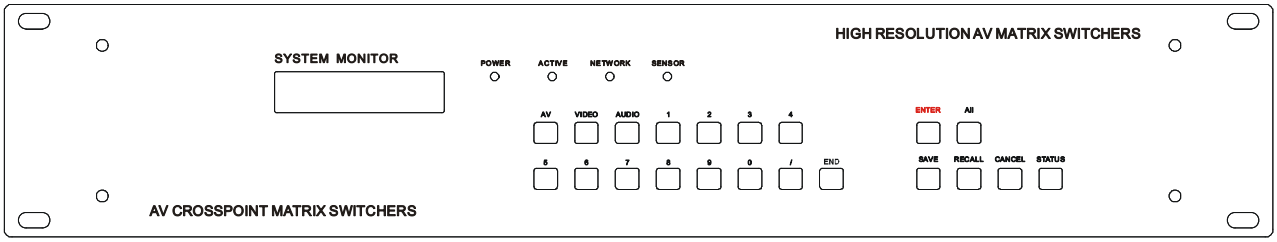
4. Front View of the Product

4.1 Front View of the MXP0404 Series



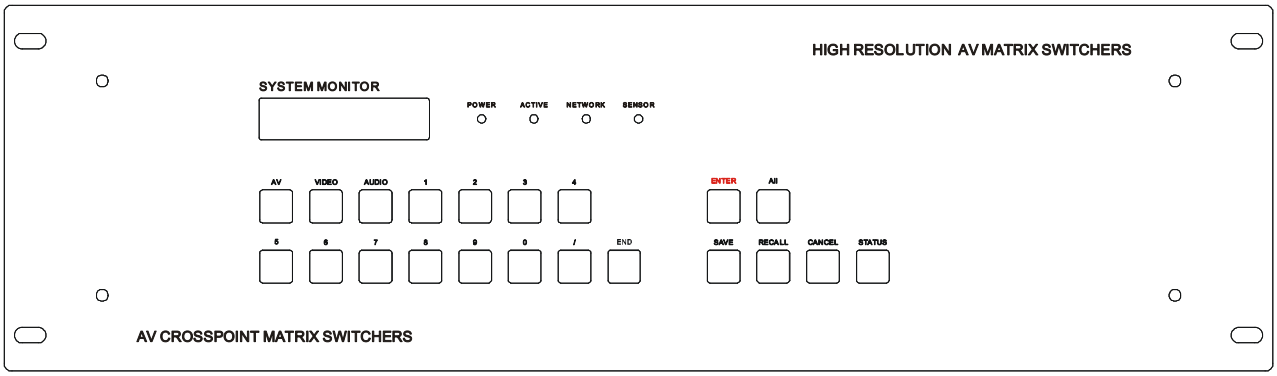
F 4-1 Front view of the MXP0404

4.2 Front View of the MXP8x Series


HIGH RESOLUTION AV MATRIX SWITCHERS
SYSTEM MONITOR
POWER ACTIVE NETWORK SENSOR
AV VIDEO AUDIO 1 2 3 4
ENTER All
5 6 7 8 9 0 / END
SAVE RECALL CANCEL STATUS
AV CROSSPOINT MATRIX SWITCHERS

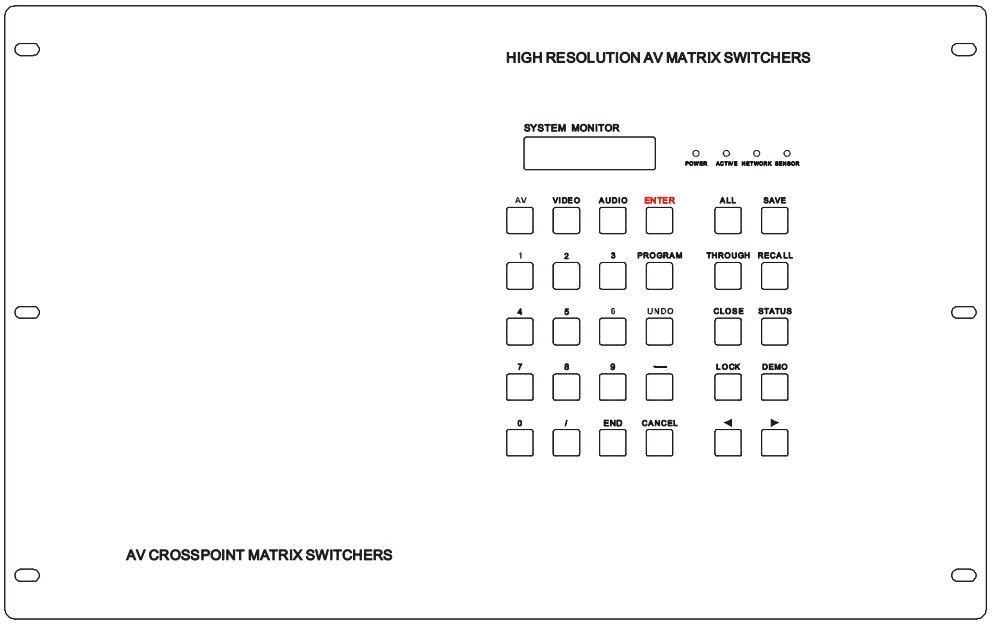
F 4-2 Front view of the MXP0802, MXP0804, MXP0808

4.3 Front View of the MXP16x Series


HIGH RESOLUTION AV MATRIX SWITCHERS
SYSTEM MONITOR
POWER ACTIVE NETWORK SENSOR
AV VIDEO AUDIO 1 2 3 4
ENTER All
5 6 7 8 9 0 / END
SAVE RECALL CANCEL STATUS
AV CROSSPOINT MATRIX SWITCHERS

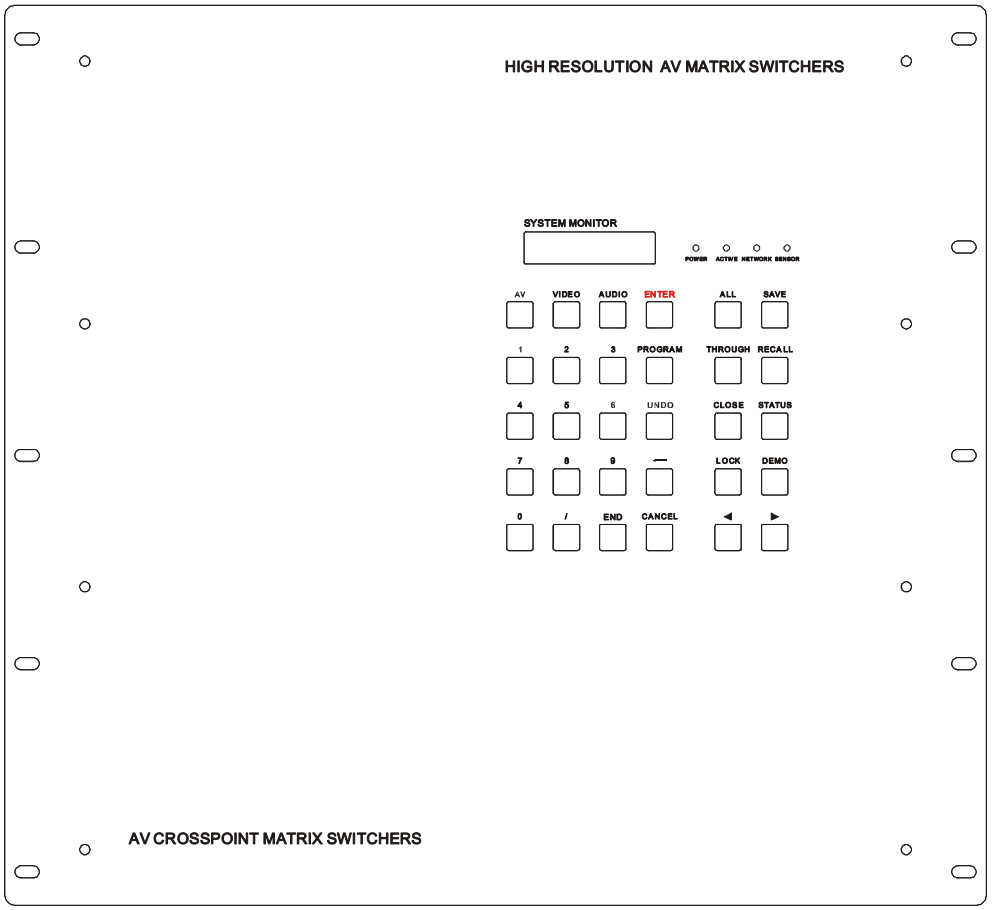
F 4-3 Front view of the MXP1604, MXP1608, MXP1616

4.4 Front View of the MXP24, 32 Series



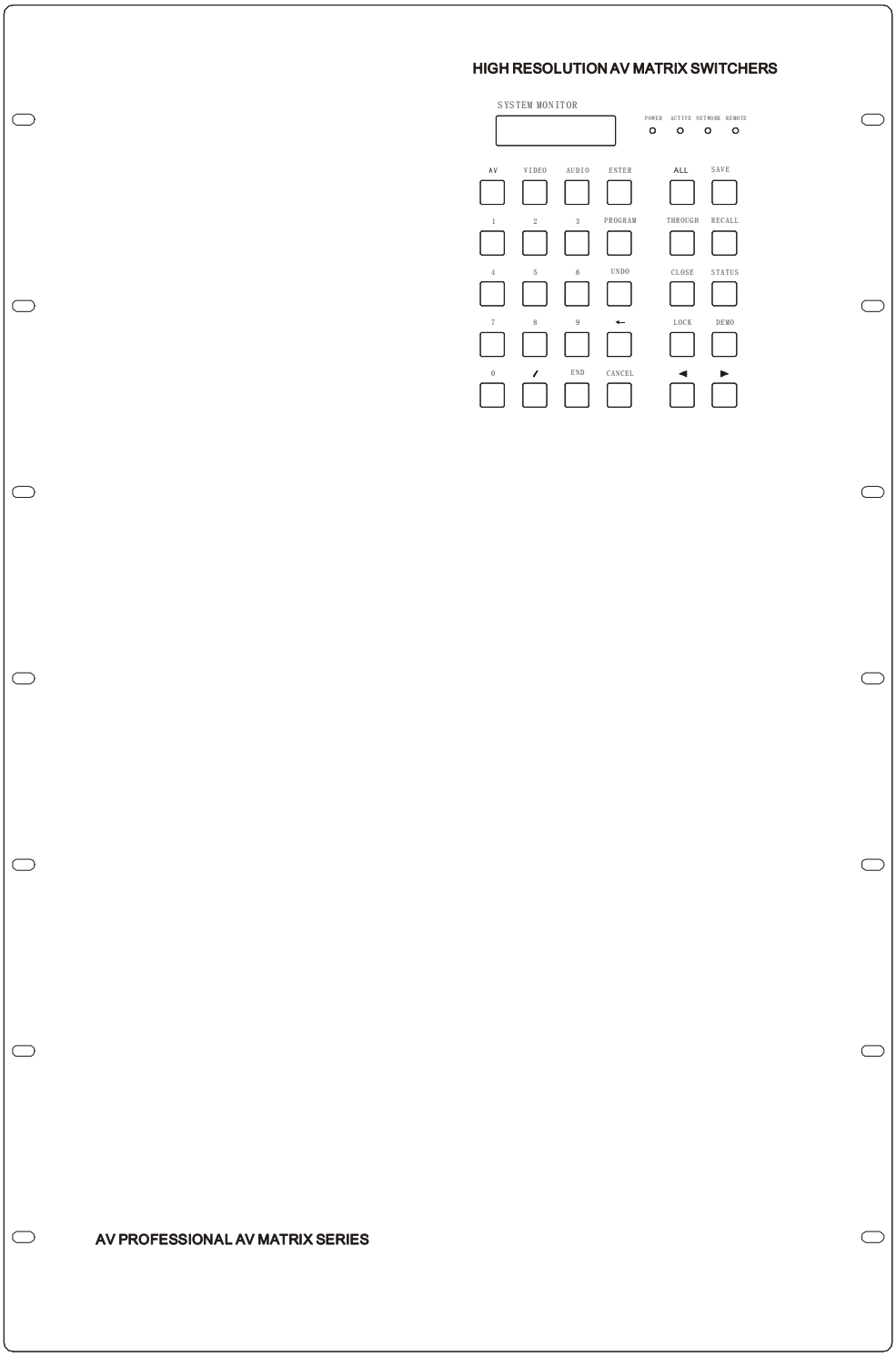
F 4-4 Front view of the MXP2408, MXP2416, MXP2424, MXP3208, MXP3216, MXP3224, MXP3232

4.5 Front View of the MXP48, 64 Series



F 4-5 Front view of the MXP4832, MXP4848, MXP6432, MXP6448, MXP6464

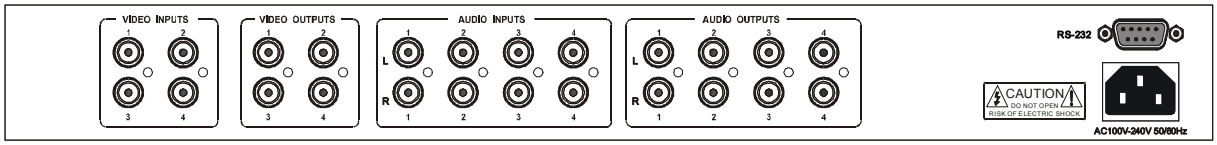
4.6 Front View of the MXP96, 128 Series


HIGH RESOLUTION AV MATRIX SWITCHERS
SYSTEM MONITOR
POWER ACTIVE NETWORK REMOTE
AV VIDEO AUDIO ENTER ALL SAVE
1 2 3 PROGRAM THROUGH RECALL
4 5 6 UNDO CLOSE STATUS
7 8 9 ← LOCK DEMO
0 / END CANCEL ◄ ►
AV PROFESSIONAL AV MATRIX SERIES

F 4-6 Front view of the MXP9664, MXP9696, MXP12864, MXP12896, MXP128128

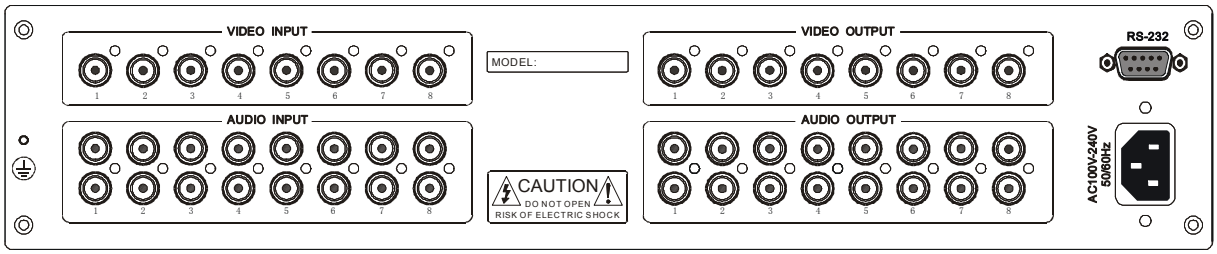
5. Rear View of the Product

5.1 Rear View of the MXP4X4 Series



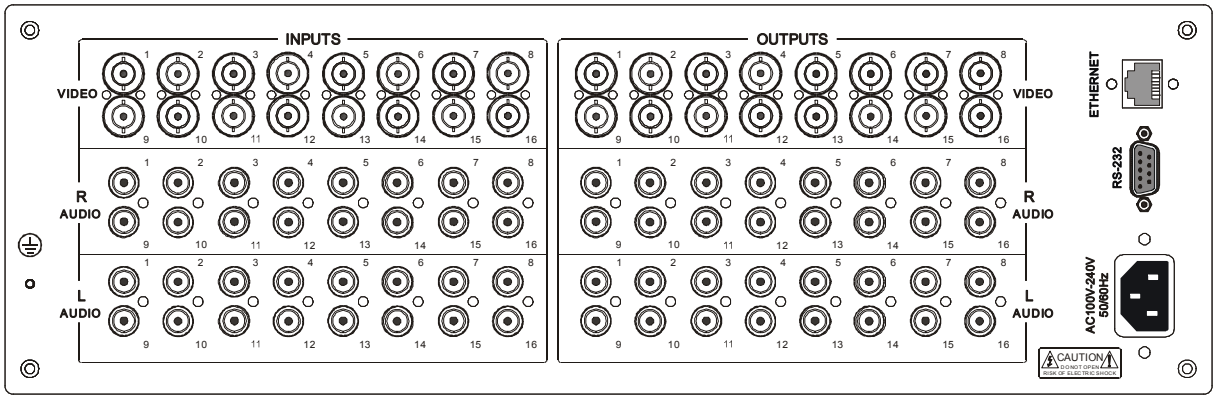
F 5-1 Rear view of the MXP0404

5.2 Rear View of the MXP8 Series



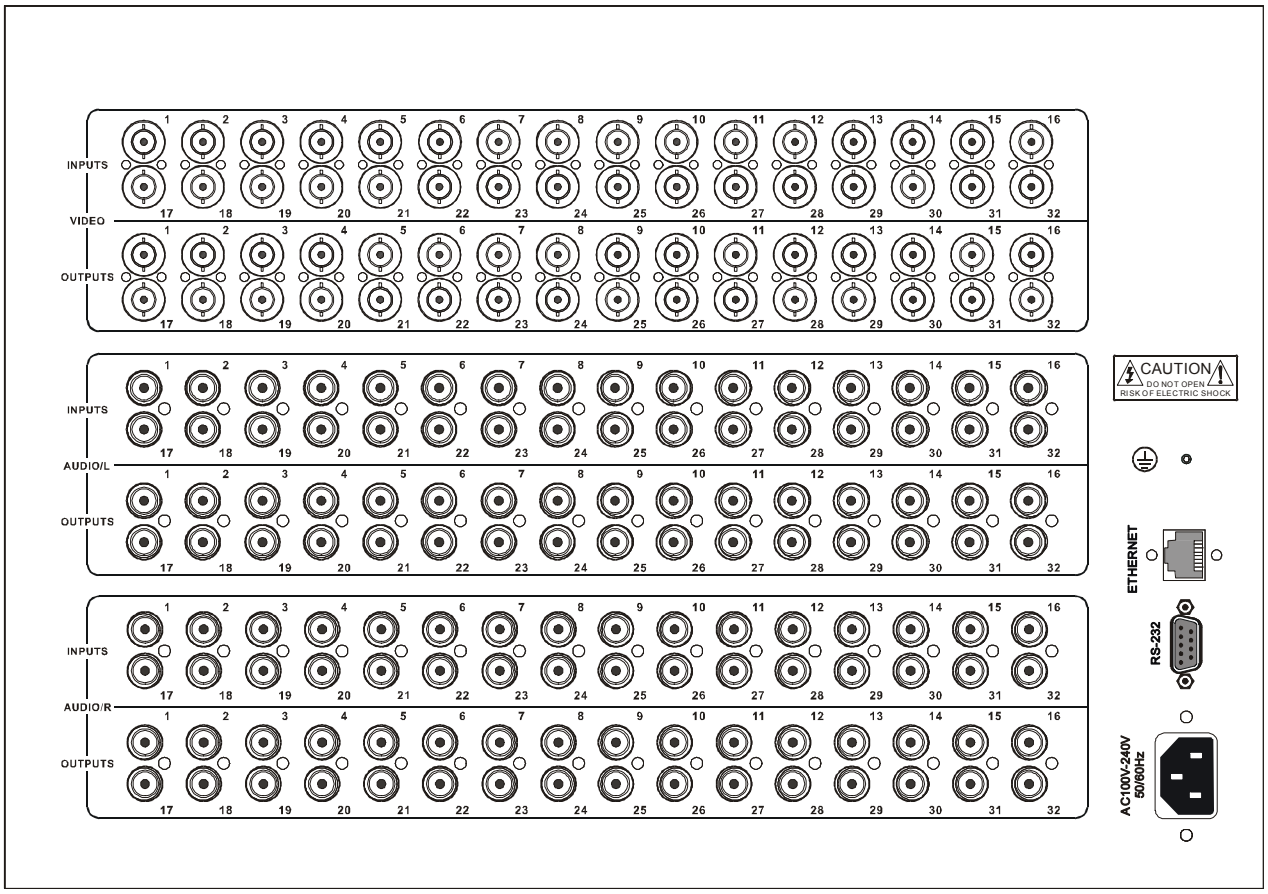
F 5-2 Rear view of the MXP0802,MXP0804,MXP0808

5.3 Rear View of the MXP16 Series



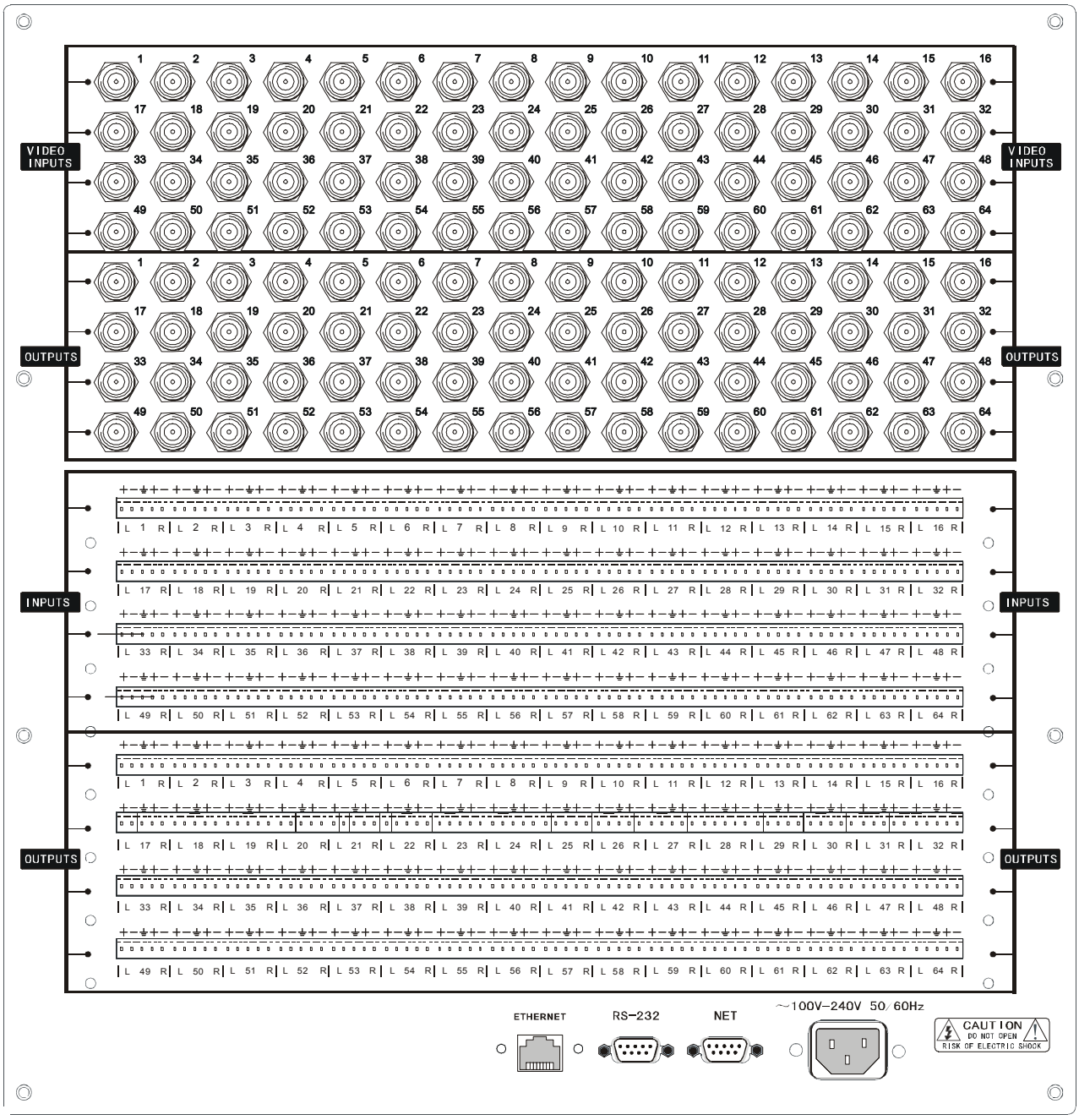
F 5-3 Rear view of the MXP1604,MXP1608, MXP1616

5.4 Rear View of the MXP24, 32 Series



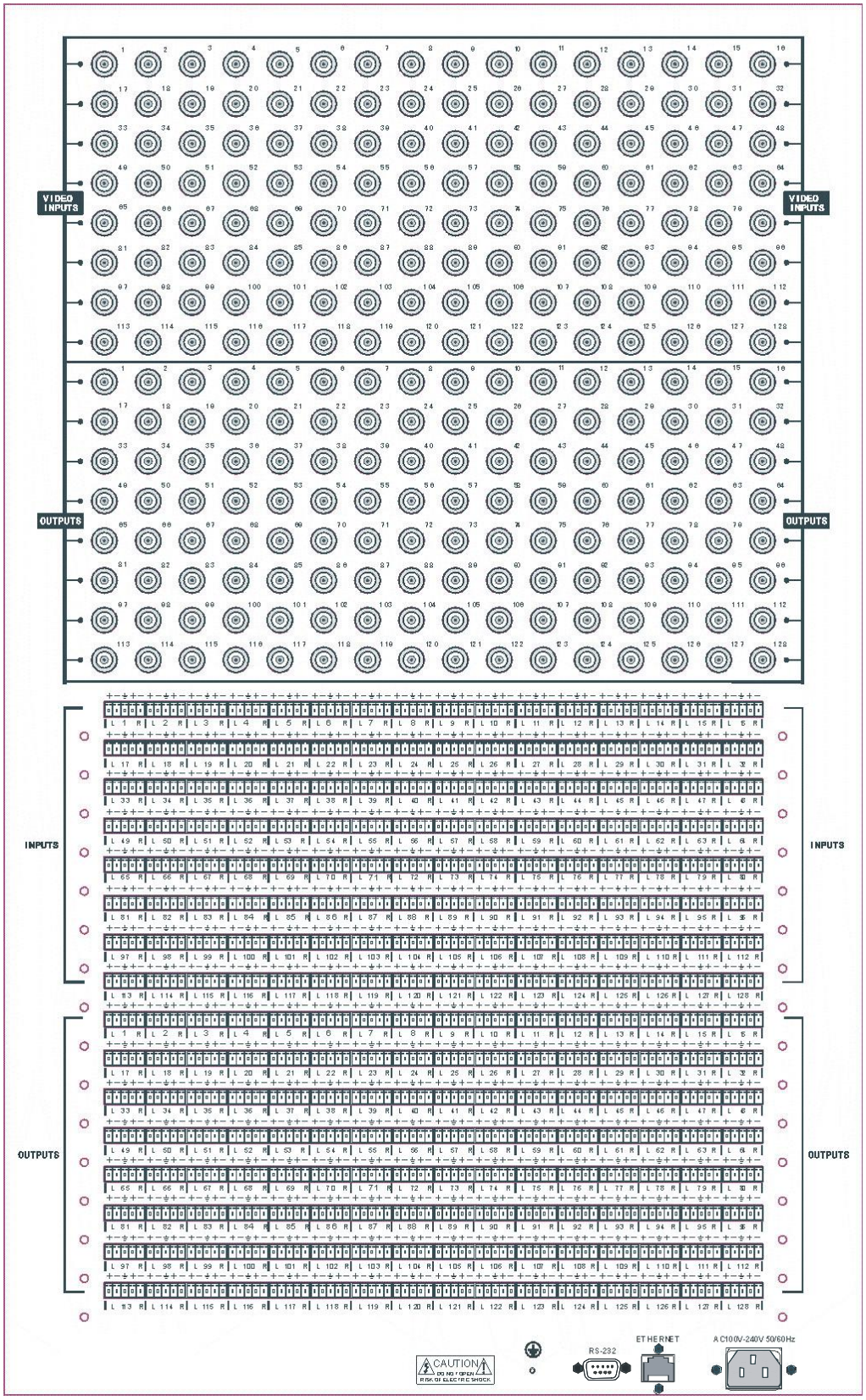
F 5-4 Rear view of the MXP2424,MXP3232

5.5 Rear View of the MXP48,64 Series



F 5-5 Rear view of the MXP4832,MXP4848,MXP6432,MXP6448,MXP6464

5.6 Rear View of the MXP96,128 Series



F 5-6 Rear view of the MXP9664,MXP9696,MXP12864,MXP12896,MXP128128

6. External Connection

6.1 Introduction of the Input and Output Connectors

According to different type of matrix, computer signal I/O interface are make up of Channel 4，Channel 8 for RCA terminals; Channel 16，Channel 24，Channel 32，Channel 48，Channel 64，Channel 96，Channel 128 BNC female terminals, audio signal I/O terminals are make up of Channel 2，Channel 4，Channel 8，Channel 16，Channel 24，Channel 32，Channel 48，Channel 64，Channel 96，Channel 128 3.8mm captive screw connectors(or RCA terminals). The channel number of MXP1616 signal I/O terminals are form Channel 1 to Channel 8 and Channel 9 to Channel 16 (form left to right, display in two rows), The interfaces are video terminals (BNC), audio left state terminals (white RCA), audio right state terminals (red RCA). Please refer to shell silk-screen figure about other types of interface.

6.2 Connection of RS-232 Communication Port

Except the front control panel, the MXP matrix switcher can be control by far-end control system or through the Ethernet control via the RS-232 communication port.
This RS-232 communication port is a female 9-pin D connector. The definition of its pins is as the table below.

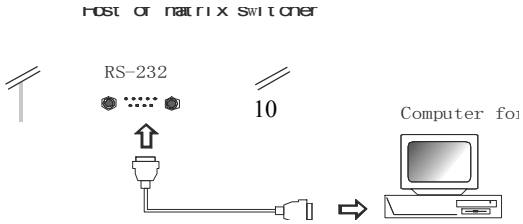
Pin	RS-232	Description
1	N/u	Not used
2	Tx	Transmit data
3	Rx	Receive data
4	N/u	Not used
5	Gnd	Signal ground
6	N/u	Not used
7	N/u	Not used
8	N/u	Not used
9	N/u	Not used

6.2.1 Connection with Control Systems

With the RS-232 port, the MXP matrix switchers can be control by several kinds of control systems.

6.2.2 Connection with Computer

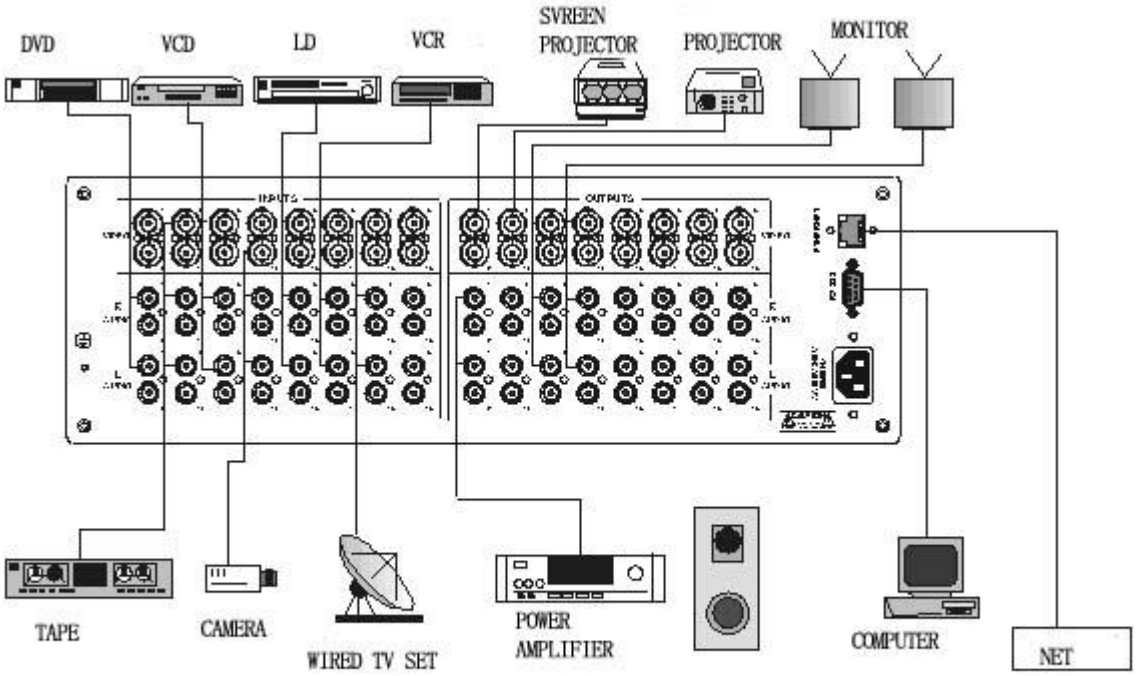
When the switcher connects to the COM1 or COM2 of the computer with control software, users can control it by that computer.
To control the switcher, users may use the application MATRIX CONTROL V2.0in the supplied CD or develop their own control software with the protocol and control codes. Please refer the details in Chapter 10.Communication Protocol and Command Codes.



F 6-1 Connection between MXP matrix switcher and the computer

6.3 How to Connect with the Input and Output Terminals

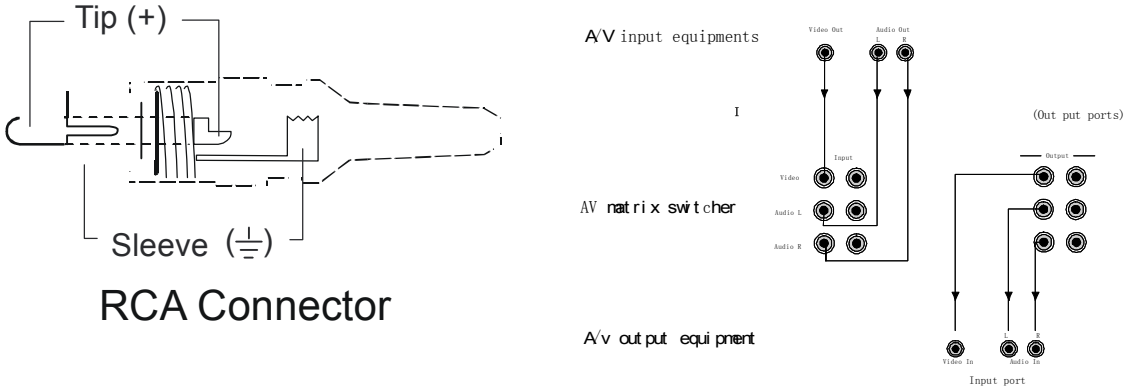
The MXP matrix switchers may take DVD players, video tape recorders, camcorders, cable TV and video showing platform as their input signal source, and projectors, RP TVs, video tape recorders and amplifiers as their output signal destinations.



F 6-2 Connection of MXP matrix switcher system

6.4 How to Connect with the MXP Devices

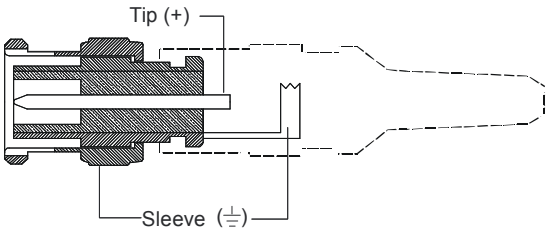
6.4.1 Connection of the MXP Matrix with RCA Connectors



F 6-3 Connection of the MXP matrix with RCA

6.4.2 Connection of the MXP Matrix with BNC Video Connectors and Captive Screw Audio Connectors

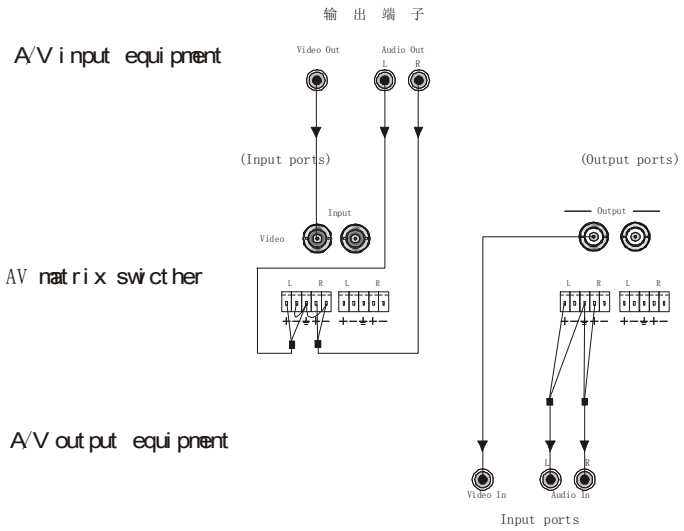
A) Connection of BNC video connectors



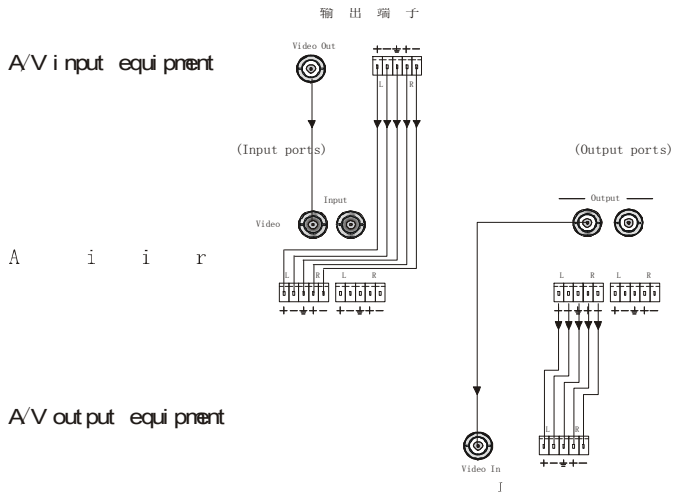
BNC Connector

B) Connection of captive screw audio connectors (unbalanced/balanced)

Unbalanced Input Unbalanced Output Balanced Input Balanced Output



Unbalanced connection



Balanced connection

7. Operation of the Control Panel

7.1 Front Panel Description

7.1.1 Front Panel Description of MXP0404

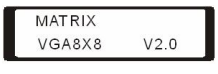
"AV" AV synchronal button: To transfer video and audio signal synchronously by the switcher
Example: To transfer both the video and the audio signals from input channel No.3 to output channel No.4.
Operation: Press buttons in this order "3", "AV", "4"".

"VIDEO" Video button: To transfer only video signals from input channel to output channel
Example: To transfer video signals from input channel No.3 to output channel No.4.
Operation: Press buttons in this order "3", "VIDEO", "4".

"AUDIO" Audio button: To transfer only audio signals from input channel to output channel
Example: To transfer audio signals from input channel No.2 to output channel No.3.
Operation: Press buttons in this order ""2", "AUDIO", "3"".

"1,2,3,4" I/O Keypads: Keys to select I/O channels.
Example: To transfer input channel No.3 to output channel No.1
Operation: Press buttons in this order : "3" in IN PUT area, "1" in OUT PUT area.

7.1.2 Front Panel Description of MXP1616



LCD display: Real time monitor of the operations and status

"1,2,3,4" Keypad: Keys to select I/O channels and save/recall preset commands

"AV" AV synchronal button: To transfer video and audio signal synchronously by the switcher
Example: To transfer both the video and the audio signals from input channel No.3 to output channel No.6.
Operation: Press buttons in this order "3", "AV", "6", "END", "ENTER"

"VIDEO" Video button: To transfer only video signals from input channel to output channel
Example: To transfer video signals from input channel No.3 to output channel No.10.
Operation: Press buttons in this order "3", "VIDEO", "1", "0", "END","ENTER"

"AUDIO" Audio button: To transfer only audio signals from input channel to output channel
Example: To transfer audio signals from input channel No.12 to output channel No.6.
Operation: Press buttons in this order "1", "2", "AUDIO", "6", "END","ENTER"

" / " Break button: To break different channels in a command
Example: To transfer video and audio signals from input channel No.1 to output channel No.2,13,6 at the same time
Operation: Press buttons in this order "1", "AV", "2", "/", "1","3", "/", "6", "END", "ENTER"

"END" Ending command button: To finish inputting a command

"ENTER" Performance button: To perform a command after inputting it

"ALL" All button: To transfer an input channel to all output channels or switch off all the output channels
Example1: To transfer video and audio signals from input channel No.7 to all output channels
Operation: Press buttons in this order "7", "ALL"
Note: This command need not follow by "END" & "ENTER"
Example2: To transfer all input signals to the corresponding output channels respectively. In another word, to switch to this status: 1->1, 2->2, 3->3, 4->4……16->16.
Operation: Press buttons in this order "ALL", "1"
Example3: To switch off all the output channels
Operation: Press buttons in this order "ALL", "2"

"SAVE" Save button: To save the present operation to a preset command
Example: To save the present operation to the preset command No.2
Operation: Press buttons in this order "SAVE", "2"
Note: There are altogether 10 preset commands ranged from No.0 to No.10.

"RECALL" Recall button: To recall the preset command
Example: To recall the preset command No.2
Operation: Press buttons in this order "RECALL", "2"

"CANCEL" Cancel button: To return to the standby status without performing any command
Example: To cancel the input instructions "1", "AV", "2", "END"
Operation: Just press button"CANCEL" after the above inputs

"STATUS" Inquiring status button: To inquire the present status
Example1: To inquire the status of output channel No.7
Operation: Press buttons in this order "7", "STATUS"
Example2: To inquire the status of all the output channels one by one
Operation: Press only the button "STATUS"

7.1.3 Front Panel Description of Additional Buttons for MXP32, MXP48, MXP64, MXP96, MXP128

"UNDO" Undo button: To resume to the status before the command just performed

"PROGRAM" Group programming button: To define, recall and clear a group of output channel

Example1: To group the output channels No.1,2,3,4,5 under the Group1

Operation: Press buttons in this order "1", "Program", "Program", "1", "2", "3", "4", "5"

Example2: To transfer signals from input channel No.1 to Group2

Operation: Press buttons in this order "1", "Program", "2"

Example3: To clear the output channels under Group1

Operation: Press buttons in this order "1", "Program", "0"

Note: Please clear the group to be set before grouping it.

" ← " Backspace button: To backspace the latest input button

"THROUGH" Through button: To transfer the signals directly to the corresponding output channels

Example: To transfer the signals from input channels No.1,2,3 to their corresponding output channels

Operation: Press buttons in this order "1", "/", "2", "/", "3", "THROUGH"

"CLOSE" Close button: To switch off the output channels

Example: To switch off the output channels No.1,2

Operation: Press buttons in this order "1", "END", "2", "END", "CLOSE"

"LOCK" Lock button: To lock buttons on the front control panel by pressing it for 3 seconds

Note: When the control panel is being locked, the switcher still can be control via the RS232 port. To unlock it, a password is needed.

"DEMO" Demo button: To demonstrate the commands one by one every 3 seconds

7.2 Command Format of the Switching Operation

With the front control panel, the switcher could be control directly and rapidly by pressing the buttons under below format.

"Input Channel"+"Switching Mode"+"Output Channel 1"+"/"+"Output Channel 2"+"END"+"ENTER"

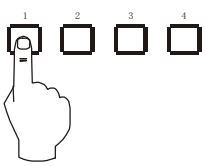
"Switching Mode": "AV", "Audio", "Video"

"Input Channel": Fill with the number of input channel to be controlled

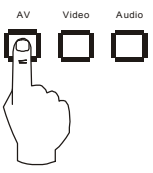
"Output Channel": Fill with the number of output channels to be controlled

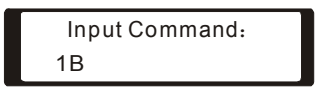
7.3 Examples of Operation

Example 1 : To transfer video and audio signals from input channel No.1 to output channel No.3,4



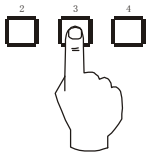
1,Press the button for input channel number"1"
Display feedback on LCD: "1" for the input channel

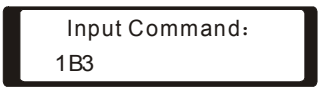




2,Press the button for switching mode "AV"
Display feedback on LCD: "B" for the switching

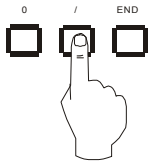
mode of video and audio (“A” for the switching mode of audio only; “V” for the switching mode of video only)

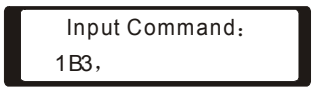




3,Press the button for the first output channel number “3”

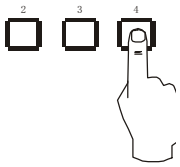
Display feedback on LCD: “3” for the first output channel

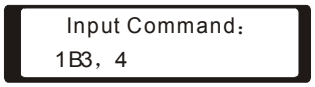




4,Press the break button“/”

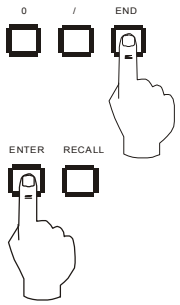
Display feedback on LCD: “ , ” for a break between two channels in a command

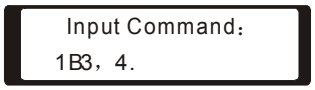




5,Press the button for the second output channel number “4”

Display feedback on LCD: “4” for the second output channel





6,Press the button“END” to finish the command

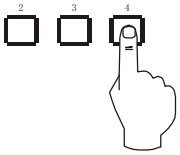
Display feedback on LCD: “.” for the end of a command

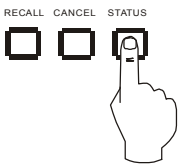
7. Press the button “ENTER” to perform this command

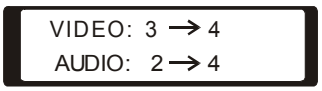
Display feedback on LCD: “Switch OK” for the successful performance of switching

Example 2: To inquire the status on the output channel No.4

Operation: Press buttons in this order “4”, “STATUS”







Display feedback on LCD: The video signal of output channel No.4 is transferred from the input channel No.3 and the audio signal is from the input channel No.2

8. Usage of the Remote Controller (Optional Access)

With the optional infrared remote controller, the matrix switcher could be control remotely. Because the function buttons on the remote controller are the same with the ones on the front control panel, the remote controller shares the same control operation and command format with the control panel. Please refer the details in **Chapter 7 Operation of the Control Panel**.

9. Communication Protocol and Command Codes

With this command system, the application **Matrix Control V2.0**is able to control and operate the MXP Matrix remotely.

Communication protocol:

Baud rate: 9600 Data bit: 8 Stop bit: 1 Parity bit: none

Command Types	Command Codes	Functions
System Command	/*Type;	Inquire the models information.
	/+xxxxxxxx;	Rewrite the password of the control panel on the Matrix. The new password, xxxxxxxx, should be an 8 digits number.
	/%Lock;	Lock the keyboard of the control panel on the Matrix.
	/%Unlock;	Unlock the keyboard of the control panel on the Matrix.
	/:BellOff;	Turn off the buzzer.
	/:BellOn;	Turn on the buzzer.
	/^Version;	Inquire the version of software
	/:MessageOff;	Block the COM port feedback information, only show “SWITCH OK ! ”

	/:MessageOn;	Receive the COM port feedback information, show the detail information for all the operation.
	/%Backlightxxx;	Setting the delay time for background light. The unit is minute, ranging form 001 to240 min. (30 min for default setting)
	[x1]All.	Transfer signals from the input channel [x1] to all output channels
	All#.	Transfer all input signals to the corresponding output channels respectively.
Operation Command (2.0 Command System)	All$.	Switch off all the output channels.
	[x1]#.	Transfer signals from the input channel [x1] to the output channel [x1].
	[x1]$.	Switch off the output channel [x1].
	[x1] V[x2].	Transfer the video signals from the input channel [x1] to the output channel [x2].
	[x1] V[x2],[x3],[x4].	Transfer the video signals from the input channel [x1] to the output channels [x2], [x3] and [x4].
	[x1] A[x2].	Transfer the audio signals from the input channel [x1] to the output channel [x2].
	[x1] A[x2],[x3],[x4].	Transfer the audio signals from the input channel [x1] to the output channels [x2], [x3] and [x4].
	[x1] B[x2].	Transfer both the video and the audio signals from the input channel [x1] to the output channel [x2].
	[x1] B[x2],[x3],[x4].	Transfer both the video and the audio signals from the input channel [x1] to the output channels [x2], [x3] and [x4].
	[x1]P[x2].	Transfer signals from the input channel [x1] to all the output channels in group [x2].
	[x1]PP[x2],[x3],[x4].	Group the output channels [x2], [x3] and [x4] under the group [x1].
	S[x].	Inquire the output channels in Group[x].
	Status[x1].	Inquire the input channel to the output channel [x1].
	Status.	Inquire the input channel to the output channels one by one.
	Save[Y].	Save the present operation to the preset command [Y]. [Y] ranges from 0 to 9.
	Recall[Y].	Recall the preset command [Y].
	Clear[Y].	Clear the preset command [Y].
	[X1]*[X2]!	Transfer both the video and the audio signals from the input channel [x1] to the output channel [x2].
	[X1]*[X2]$	Transfer the audio signals from the input channel [x1] to the output channel [x2].
Compatible	[X1]*[X2]%	Transfer the video signals from the input channel [x1] to the output channel [x2].
	[X1]*[X2]&	Transfer the video signals from the input channel [x1] to the output channel [x2].

Note:

1. [x1], [x2], [x3] and [x4] are the symbols of input or output channels ranged according to the model of the matrix switcher. If the symbols exceed the effective range, it would be taken as a wrong command.
2. In above commands, "["and "]" are symbols for easy reading and do not need to be typed in actual operation.
3. Please remember to end the commands with the ending symbols "." and ";".

Detail Examples:

1、 Transfer signals from an input channel to all output channels: [x1]All.

Example: To transfer signals from the input channel No.3 to all output channels

Run Command: "3All."

2、 Transfer all input signals to the corresponding output channels respectively: All#.

Example: If this command is carried out on a MXP 16X16 matrix switcher, the status of it will be: 1->1, 2->2, 3->3, 4->4……16->16.

3、 Switch off all the output channels: All$.

Example: After running this command, there will be no signals on all the output channels.

4、 Transfer signals from an input channel to the corresponding output channel: [x]#.

Example: To transfer signals from the input channel No.5 to the output channel No.5.

Run Command: "5#."

Example: To transfer signals from the input channel No.1,2,3,4 to the corresponding output channel No.1,2,3,4.

Run Command: "1,2,3,4#."

6,Switch off an output channel: [x]$.

Example: To switch off the output channel No.5.

Run Command: "5$."

Example: To switch off the output channel No.1,2,3,4.

Run Command: "1,2,3,4$."

7,Switch video signals command: [x1] V[x2].

Example: To transfer the video signals from the input channel No.3 to the output channel No.5.

Run Command: "3V5."

Example: To transfer the video signals from the input channel No.3 to the output channel No.8,9,12.

Run Command: "3V8,9,12."

8,Switch audio signals command: [x1] A[x2].

Example: To Transfer the audio signals from the input channel No.10 to the output channel

Run Command: "10A2."

Example: To transfer the audio signals from the input channel No.10 to the output channel No2,20,30,40.

Run Command: "10A2,20,30,40."

9,Switch both video and audio signals synchronously: [x1] B[x2].

Example: To transfer both the video and the audio signals from the input channel No.120 to the output channel No.12,13,15.

Run Command: “120B12,13,15.”

10,Transfer signals to group channels: [x1]P[x2].

Example: After the command “2PP1 ，3 ，5 ，7.” was carried out, the command “1P2.” would transfer signals from the input channel No.1 to all output channels in Group2 (1 ，3 ，5 ，7). If [x2] was filled with “0”, this command will clear the Group[x1]. Please clear the group to be set before grouping it.

11,Group channel command: [x1]PP[x2],[x3],[x4].

Example: To group the output channels No.1,3,5,7 under the Group2.

Run Command: “2PP1 ，3 ，5 ，7.”

Notes: In this command, the maximum value of [x1] equals to the maximum output channels the matrix switcher has. To new a Group[x1], the command is “[x1]P0.[x1]PP[x2],[x3],[x4].”. To expand the Group[x1], the command is “[x1]PP[x7],[x8],[x9].”. Each output channel belongs the only group claims it the latest.

12,Inquire the output channels in Group[x]: S[x].

Example: To inquire the output channels in Group1.

Run Command: “S[1]”

13,Inquire the input channel to the output channel [x]: Status[x].

Example: To inquire the input channel to the output channel No.23.

Run Command: “Status23.”

14,Inquire the input channel to the output channels one by one: Status.

Example: To inquire the input channel to the output channels one by one

Run Command: “Status.”

15,Save the present operation to the preset command [Y]: Save[Y].

Example: To save the present operation to the preset command No.7.

Run Command: “Save7.”

16,Recall the preset command [Y]: Recall[Y].

Example: To recall the preset command No.5.

Run Command: “Recall5.”

17,Clear the preset command [Y]: Clear[Y].

Example: To clear the preset command No.5.

Run Command: “Clear5.”

10. Technical Specifications

Series / Specifications	MXP0404	MXP8 Series	MXP16 Series	MXP24 Series	MXP32 Series	MXP48, 64 Series	MXP96, 128 Series
Video							

Series / Specifications	MXP0404	MXP8 Series	MXP16 Series	MXP24 Series	MXP32 Series	MXP48, 64 Series	MXP96, 128 Series
Models included	MXP0404	MXP0802 MXP0804 MXP0808	MXP1604 MXP1608 MXP1616	MXP2408 MXP2416 MXP2424	MXP3208 MXP3216 MXP3224 MXP3232	MXP4832 MXP4848 MXP6432 MXP6448 MXP6464	MXP9664 MXP9696 MXP12864 MXP12896 MXP128128
Gain	0 dB						
Bandwidth	100MHz (-3dB) , fully loaded 0 -10MHz:≤+/- 0.1dB 0 -30MHz:≤+/- 0.5dB			150MHz (-3dB) , fully loaded 0 -10MHz:≤+/- 0.1dB 0 -30MHz:≤+/- 0.5dB			
Cross talk sum	-50dB @ 5 MHz, -45dB @ 10 MHz						
Differential phase I/0S	<1.28° , 3.58MHz						
Differential phase error	0.1%, 3.58-4.43MHz						
Differential gain error	0.1°, 3.58-4.43MHz						
Maximum transfer delay	5nS(±1nS)						
Switching speed	200 ns (Max)						
Signal type	Composite video						
Input video							
Connector	RCA	RCA	BNC female	BNC female	BNC female	BNC female	BNC female
Maximum/ Minimum level	Analog signals: 0.5V ~ 2.0V p-p						
Impedance	75 Ω						
Echo loss	-30dB@5MHz						
Genlock	0.3V-0.4Vp-p						
Max error in DC offset	15mV						
Output video							
Connector	RCA			BNC female			

Series / Specifications	MXP0404	MXP8 Series	MXP16 Series	MXP24 Series	MXP32 Series	MXP48, 64 Series	MXP96, 128 Series
Maximum/ Minimum level	Analog signals: 0.5V ~ 2.0V p-p						
Impedance	75 Ω						
Echo loss	-30dB@5MHz						
DC offset	±5mV (Maximum)						
Transition type	Vertical interval						
Sync signal							
Input/output signals	NTSC 3.58，NTSC4.43，PAL，SECAM						
Audio signal							
Input connector	RCA		RCA	3.8mm with screw , 5 pole			
Output connector	RCA		RCA	3.8mm with screw , 5 pole			
Gain	0dB						
Frequency respond	20 Hz ~ 20 kHz,						
General harmonic distortion + noise	0.03% @ 1 kHz （under rating voltage）						
S/N	>90dB						
Segregation rate	>80dB @ 1 kHz						
Y/C interferer	<-80dB @ 1 kHz, fully loaded						
CMRR	>75dB @: 20 Hz ~ 20 kHz						
Signal	Stereo ， balanced /unbalanced						
Impedance	Input：>10 kΩ（balanced /unbalanced） Output：50 Ω （unbalanced），100 Ω（balanced）						
Maximum input level	+19.5dBu, （balanced /unbalanced）						
Gain error	±0.1dB @20 Hz ~ 20 kHz						
Max output level	+19.5dBu, （balanced /unbalanced）						

Series / Specifications	MXP0404	MXP8 Series	MXP16 Series	MXP24 Series	MXP32 Series	MXP48, 64 Series	MXP96, 128 Series
Control type							
Serial control port	RS-232, 9-pin FD connector						
Baud rate and protocol	Baud rate: 9600 Data bit: 8 Stop bit: 1 Parity bit: none						
Serial control poling protocol	2 = TX, 3 = RX, 5 = GND						
Ethernet	**Connector**	RJ-45 Female (Optional accessory)					
	Protocol	TCP/IP					
	Speed	Full/half-duplex 10/100M					
Control application	Switch 2.0						
Features							
Power supply	100VAC ~ 240VAC, 50/60 Hz, universal international power supply						
Temperature	Storing and operating temperature: -20° ~ +70°C						
Humidity	Storing and operating humidity: 10% ~ 90%						
Size	485(L)X245(W)X50mm(H)	485(L)X245(W)X100mm(H)	485(L)X245(W)X150mm(H)	485(L)X245(W)X285mm(H)	485(L)X245(W)X285mm(H)	485(L)X265(W)X465mm(H)	485(L)X265(W)X920mm(H)
Weight	1.8kg	3.5kg	4.6 kg	9.0 kg	9.0 kg	16.8 kg	29.5kg
MTBF	30,000 hours						
Quality guarantee	1 year free guarantee						

11. Troubleshooting & Maintenance

1) When the output image in the destination device connected to the MXP Matrix has ghost, such as the projector output with ghost, please check the projector's setting or try another high quality connection cord.

2) When there is a color losing or no video signal output, it may be the unmatched MXP connector order between the input and output end.

3) When the remote controller doesn't works:
   A. Maybe the battery is run out of, please change a new one.
   B. Maybe the controller is broken, please ask the dealer to fix it.

4) When user can not control the MXP Matrix by computer through its COM port, please check the COM port number in the software and make sure the COM port is in good condition.

5) When switching , the beeper beeps but without any output image :

   A. Check with oscilloscope or multimeter if there is any signal at the input end. If there is no signal input, it may be the input connection cord broken or the connectors loosen.
   B. Check with oscilloscope or multimeter if there is any signal at the output end. If there is no signal output, it may be the output connection cord broken or the connectors loosen.
   C. Please make sure the destination device is exactly on the controlled output channel
   D. If it is still the same after the above checking, it may be something wrong in the switcher. Please send it to the dealer for fixing.

6) If the POWER indicator doesn't work and there is no display on LCD or no respond to any operation, please make sure the power cord connected well.

7) If the output image is interfered, please make sure the system is earthed well.

8) If the static becomes stronger when connecting the BNC connectors, it may be due to the incorrect earthing of the power supply, Please earth it again correctly, and otherwise it would bring damage to the switcher or shorten its natural life.

9) If the beeper beeps, the LCD displaying normally and there is also returning code, but without any output image or audio output.
   A. Maybe A/V connection cord broken, please change a new one.
   B. Maybe the connection cord cutting-out, please change a new one.
   C. May be the connection cord broken, please change a new one.

10) If the Matrix can not be controlled by the keys on the front panel, RS232 port or remote controller, the host may has already been broken. Please send it to the dealer for fixing.